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National Park Service archeologists excavating site along Yellowstone Lake.

Archeology of Yellowstone National Park

National Park Service
Midwest Archeological Center

Home For More than 10,000 Years.

Many myths exist about Yellowstone. However, none is more persistent than the notion that American Indian groups rarely ventured into the area because of their fear of the numerous geysers. However, this is not the case. Our current understanding suggests Native Americans have called the area that was to become Yellowstone National Park home for over 10,000 years.

Archeologists have only recently begun to investigate and understand how prehistoric groups used upland and mountain environments, for only a short while ago it was believed by many researchers that these areas were too harsh to support a significant number of people. And as such, the mountains were considered marginal and somehow unimportant to the major cultural developments that were occurring in the basins and on the plains.

Contemporary archeological investigations use a number of researchers from various disciplines to piece together the puzzle of prehistoric societies. ***Palynology****, the study of plant pollen, is important for understanding the various plant communities that occupied the region in the past, and how the climate has changed through time.* ***Geomorphology****, the study of past landforms, provides information on how landforms have changed through time, usually in relation to shifting climatic patterns.* ***Paleoethnobotany****, the study of past uses of plants, provides us with the understanding of what plants were used by prehistoric groups. Through the results of these studies, we are beginning to piece together a story of a very dynamic relationship between humans and their environments. For while the environment doesn't determine specifically how people settle, and what foods they eat, it does set limits in which people can operate, and understanding these limits is a major focus of archeology.*

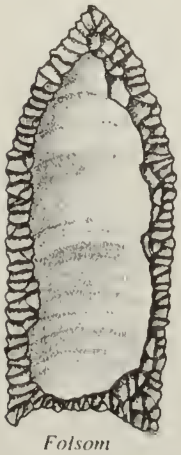
Absolute dating of cultural deposits is an important interpretive tool for archeologists. Two techniques commonly employed by archeologists working in the region are radiocarbon and obsidian hydration. ***Radiocarbon*** *dates are determined by measuring the amount of Carbon 14 remaining in an organic sample, usually charcoal or bone. Atmospheric radiocarbon enters the life cycle of plants and animals during respiration. After death Carbon 14 no longer enters the organism and begins to decay at a known rate. Sophisticated equipment is used to measure the remaining Carbon 14, the amount of which is used to calculate the age since death.* ***Obsidian hydration*** *dating is based on the rate at which obsidian absorbs water at its surface, which is dependent on temperature. By measuring the thickness of the "hydration layer" a date for manufacture of the artifact can be obtained.*

Past Climatic Patterns

Possibly as early as 40,000 years ago a series of mountain glaciers moved downslope carving out many valleys. During full glaciation an icecap as thick as 3000 feet covered most of what is now Yellowstone. These glaciers retreated 14,000 years ago. In a short period of time plants, animals, and humans colonized the landscape. Following deglaciation the climate was still colder and moister than present conditions. High altitude subalpine and alpine vegetation communities dominated the area, with mixed conifer forests at lower elevation basins. Trees appeared 11,500 years ago, beginning with Engelmann spruce, followed by lodgepole pine, Douglas fir, whitebark pine, and limber pine. Between 9500 and 5000 years ago a period of increased warmth and aridity occurred resulting in an increase of Douglas fir and aspen, and other drought resistant species. Fire frequency may also have increased during this time. By about 5000 years ago vegetation similar to that of today flourished.

Paleoindian Period (12,000 to 8,000 years before present)

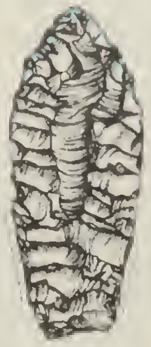
The earliest evidence of humans living in Yellowstone is provided by a Folsom projectile point discovered in the Bridger-Teton National Forest. The point dating about 10,900 years ago was manufactured from obsidian geochemically sourced to Obsidian Cliff, Yellowstone. This landform is the remnant of the last violent eruption of the Yellowstone caldera 600,000 years ago and is the predominant resource for tool manufacture in the Park, a resource which was recognized very early in the course of human habitation of the area.



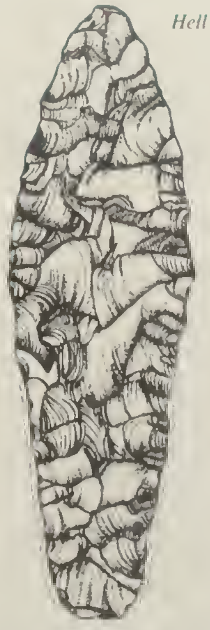
Folsom

These large, fluted spear points have been found in the surrounding basins in association with extinct bison bones. Seasonal forays by small groups of people to hunt bison, mountain sheep and deer, and also to collect plant foods, were made during this time.

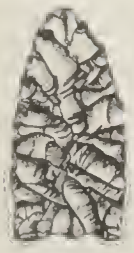
More substantial evidence of occupation is provided by numerous projectile point types, such as Agate Basin and Hell Gap, dating to about 10,000 years ago. About 9000 years ago, a mountain-oriented lifestyle developed. This archeological tradition is characterized by lanceolate spear points with contracting stems and concave bases. These people subsisted on a more diverse array of plant species, as well as numerous large and small mammals. It has been suggested that a climatic shift to warmer and more arid conditions may have caused this increased utilization of the mountains.



Agate Basin



Hell Gap



Lanceolate

UPB

Archaic Period (8,000 to 1500 years before present)

Continuation of the broad-based economy begun during late Paleoindian times is a hallmark of the Archaic Cultures. A change in projectile point technology from lanceolate points to side-notched and corner-notched points is also characteristic of this archeological tradition. During this period evidence of semi-subterranean structures, called pithouses, appear in the archeological record of the region. Other innovations include earth ovens for preparing foods. These cooking hearths (see photo) were constructed by digging a pit in the ground and filling it with heated rocks. Meat, roots from camas, bitterroot, yampa, or prickly pear, and the seeds of plants such as goosefoot and waterleaf were prepared in these hearths.

Side-Notched

Corner-Notched

Excavated hearth used for roasting seeds and bulbs.

Late Prehistoric/Protohistoric-Historic (1500 to 100 years before present)

Reconstructed Intermountain pottery vessel

Radiocarbon dates derived from cultural deposits suggest an increase in use of the area by native groups during the last 1500 years. This period is best characterized by the development of the bow and arrow, which replaced the earlier atlatl, or spearthrower, of Paleoindian and Archaic times. Innovations in hunting, through the use of sheep traps in the mountains and bison corrals on the plains, also occurred. The use of steatite (soapstone) vessels and the development of pottery probably also increased the efficiency of these groups in preparing and storing foods.

During historic times, a number of tribes are known to have used the Yellowstone area. However, the one group most closely associated with the Park is the Shoshone. Trappers and early explorers of the region provide first-hand accounts of small bands of Shoshone in the Park. However, it is uncertain when the Shoshone entered the region. Linguistic evidence from the Great Basin suggests a recent migration of Numic-speaking peoples about AD 1500, although some scholars suggest that archeological evidence indicates the Shoshone are the descendants of people who lived in the mountains for thousands of years.

Stone circles, possibly representing tepee sites, wickiup and lean-to structures still exist in the Park today and are haunting evidence of the people who called Yellowstone their home for thousands of years.

The story of the prehistory of Yellowstone National Park is slowly coming together. To date, only about one percent of the Park has been surveyed for archeological sites, and only a few exploratory excavations have been conducted. Archeologists are now finding evidence of groups of people who intimately knew the treasures of our first national park thousands of years prior to the arrival of Europeans. The knowledge that we can glean through exploration of the past may help us to understand contemporary issues for better management of the park.

Remains of a historic Indian wickiup.

How Can You Help Protect Archeological Sites?

Archeological sites, like other resources in the Park, are protected under federal legislation. If you come upon archeological materials, do not remove, but report your findings to a park ranger, who will record this information. The locational information is very important to our understanding of the past human habitation of Yellowstone National Park. Removal of artifacts from their location destroys essential information needed in order to study past humans. If you see anyone collecting or destroying archeological materials, please report this to the park rangers.

Destruction or removal of archeological materials is illegal.

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